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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Artcle 36 and Rule 70)

Applicant's or agent's file reference OPP030028KR	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. **PCT/KR2003/001249**	International filing date *(day/month/year)* **25 JUNE 2003 (25.06.2003)**	Priority date *(day/month/year)* 25 JUNE 2002 (25.06.2002)

International Patent Classification (IPC) or national classification and IPC

IPC7 C08K 5/3445

Applicant

MICRO SCIENCE TECH CO., LTD. et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

   [X] This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

   - I [X] Basis of the report
   - II [ ] Priority
   - III [ ] Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV [ ] Lack of unity of invention
   - V [X] Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI [ ] Certain documents cited
   - VII [ ] Certain defects in the international application
   - VIII [ ] Certain observations on the international application

Date of submission of the demamd	Date of completion of this report
22 AUGUST 2003 (22.08.2003)	22 OCTOBER 2004 (22.10.2004)

Name and mailing address of the IPEA/KR
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International aplication No.
PCT/KR2003/001249

I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed

☒ the description:
pages 2-43 , as originally filed
pages NONE , filed with the demand
pages 1 , filed with the letter of 22/08/2003

☒ the claims:
pages 44-48 , as originally filed
pages NONE , as amended (together with any statment) under Article 19
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the drawings:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

☒ the sequence listing part of the description:
pages NONE , as originally filed
pages NONE , filed with the demand
pages NONE , filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language English which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☒ the language of publication of the international application(under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide** and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained inthe international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disc losure in the international applicationas as filed has been furinshed.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheet

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box(Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION

International aplication No.
PCT/KR2003/001249

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-23	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-23	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-23	YES
	Claims	NONE	NO

2. Citations and explanations (Rule 70.7)

The title in detailed description(page No.1) has been amended. The scope of this title has not been extended beyond the disclosure of the patent application as filed.

Reference is made to the following document:

D1 : JP 09-315910 A (Sumitomo Chem. Co., Ltd)

The present invention relates to an anti-microbial or anti-coagulating polymer resin, a method for preparing the same, and a medical appliance or instrument using the same, and more particularly to a method for preparing an anti-microbial or anti-coagulating medical polymer resin comprising a step of simply mixing a polymer resin with at least one kind of pharmaceutically active material without using a solvent.

Document D1 is considered to represent the most relevant state of the art. It discloses an anti-microbial resin composition made by using a specific compound capable of enduring a high temperature in treatment of a plastic without damaging basic performances of a plastic, showing high antibacterial actions having high light-resisting performances. This composition is obtained by mixing a resin with a pyridyl pyrimidine compound.

The subject matter of the present claims 1-23 differs from D1 since this anti-microbial or anti-coagulating material is safe to a human body and can be mixed with a polymer resin without any solvent, thereby removing a possible harmfulness to a human body and being environmentally favourable.

Therefore, the subject matter of claims 1-23 is considered to be novel, to involve an inventive step and to be industrially applicable.

POLYMER RESIN FORMULATION HAVING ANTI-MICROBIAL OR ANTI-COGULABILITY AND PREPARATION METHOD THEREOF

BACKGROUND OF THE INVENTION

(a) Field of the Invention

The present invention relates to a method for preparing an anti-microbial or anti-coagulating polymer resin, particularly to a method for preparing a functional polymer resin that can prevent secondary bacterial infection, inhibit coagulation of blood when inserted into a human body, and maintain superior medicinal efficacy durability even after injection and extrusion molding, by combining a material that is safe to a human body, has superior compatibility with materials for commonly used medical instruments/appliances, and has superior anti-microbial or anti-coagulating properties on the surface of a product, with various materials for medical instruments/appliances such as silicon, etc., in a non-solvent form.

(b) Description of the Related Art

Various forms of organic anti-microbial formulations for conventional anti-microbial and anti-pollutant functions such as quaternary ammonium salt, chlorohexidine, carbendazim, thiazole, azole, Sn types, etc. have been reported. However, many of the anti-microbial and anti-pollutant products using the above materials have problems including unsecured safety due to toxicity, and ecosystem destruction due to release of environmental hormones. Additionally, their anti-microbial effects may be decreased due to thermal decomposition during high temperature processing, and product deterioration due to yellowing may also occur. Particularly, a polymer resin used in the medical field such as for an